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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,987	07/11/2005	Dolf Henricus Jozef Van Casteren	NL 030036	7997
24737 7590 05/24/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER TRAN, THUY V	
			ART UNIT 2821	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/541,987

Applicant(s)

VAN CASTEREN ET AL.

Examiner

Thuy V. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on amendment submitted on 03/15/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office Action is in response to the Applicants' amendment submitted on 03/15/2007. In virtue of this amendment, claims 12-18 are newly added; and thus, claims 1-18 are now presented in the instant application.

#### ***Specification Objections***

1. The amended abstract of the disclosure is objected to because of the following informalities:

Line 3, "." should be changed to --,--; "A" should be changed to --a--; and "is" should be deleted; and

Line 36, "." should be changed to --,--; "A" should be changed to --and a--; and "is" should be deleted.

Correction is required. See MPEP § 608.01(b).

2. The amended specification is objected to because it appears to be mis-descriptive:

(i) reference numeral [5] is designated for the cable (see line 25 at page 5 of the specification, or in Fig. 2); and

(ii) the first part including "A commutation circuit 5 ... commutation circuit 5" is erroneous. The commutation circuit cannot be connected to itself.

Appropriate correction is required.

#### ***Drawings***

3. The "Replacement Sheets" of drawings submitted on 03/15/2007 are accepted.
4. However, upon reconsideration, the drawings are still objected to because of the following reasons:

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- For clarity, textual characters should be provided in boxes [1, 3] of Fig. 1, boxes [15, 16] of Fig. 2, box [40] of Fig. 5, and box [63] of Fig. 11 (e.g. in box [1], providing “first circuitry or rectifier/up-converter”, in box [3], providing “commutating stage”, etc.); and
- For compliance with 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “resistor” (which is connected in series to the diode as recited in lines 2-3 of claim 6, and in line 2 f claim 17) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicants will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 9, the recitation “means for determining ... maximum oscillation period” in lines 4-9 renders the claim indefinite since it is not clear what and/or where “the means for determining a maximum oscillation period of the resonant circuit” and “the means for choosing the on-time of the switch” are. If these parts/devices are included in the control circuit [16] or else, providing a clarification is requested <sup>See NOTES</sup>.

With respect to claim 11, the recitation “means for calculating ... minimal” in lines 4-8 renders the claim indefinite since it is not clear what and/or where “the means for calculating” and “the means for selecting” are. If these parts/devices are included in the control circuit [16] or else, providing a clarification is requested <sup>See NOTES</sup>.

NOTES: The drawings should be reviewed and appropriately provided with a proper illustration as clarified.

***Claim Objections/ Minor Informalities***

7. Claim 9 is objected to because of the following informalities:

Line 9, “that” should be changed to --than--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Uchida (U.S. Patent No. 6,272,024 B2).

With respect to claim 7, Uchida discloses, in Figs. 1-3, a circuit and a corresponding method for providing power to a load [14] comprising the steps of (1) applying a number of voltage pulses (see Fig. 2) to a primary winding [8] (see Fig. 1) of a transformer [2] so as to produce each time a high-voltage pulse (see Fig. 2) on a secondary winding [9] of the transformer, wherein the high voltage pulse is shaped by transformer inductances (of windings [8, 9]; see Fig. 1) and capacitances (of capacitor [11]; see Fig. 1) at a secondary side to create a load pulse, and (2) applying the load pulse to the load [14], and providing, between every application of a voltage pulse, a current path through a diode [16] directly connected between the primary winding [8] for primary current so that the transformer [2] is demagnetized and saturation of the transformer [2] is prevented.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-6, 8, 10, and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida (U.S. Patent No. 6,272,024 B2).

With respect to claim 1, Uchida discloses, in Figs. 1-3, a circuit for providing power to a load [14] with a predetermined specification comprising (1) a transformer [2] having a primary winding [8] and a secondary winding [9]; said secondary winding [9] being part of a resonant circuit [9, 11], (2) first and second load connection nodes [12, 13] for coupling of the load [14] in series to the secondary winding [9], (3) a switch [3] coupled in series to the primary winding [8], an on-time and an off-time of the switch [3] being controllable by a control element [5], for generating a voltage pulse (see Fig. 2; col. 4, lines 15-16) over the primary winding [8], and (4) a diode [16] (see Fig. 1) coupled in series with a surge suppressor [17, 18] and both coupled in parallel to the primary winding [8] for absorbing the surges developed across the primary winding [8] of the transformer (see col. 4, lines 52-59) and for forward biased by the voltage developed in the primary winding [8] of the transformer [2] when the switch [3] is turned off (see col. 4, lines 30-32) and thus resulting in demagnetizing the transformer during the off-time of the switch [3], the on-time and the off-time of the switch [3] being predetermined (which is at a rate required for holding the converter output voltage constant; see col. 4, lines 15-16). Uchida does not disclose that the diode [16] is directly coupled in parallel to the primary winding [8] of the transformer [2]. This means that there is no such arrangement of the surge suppressor [17, 18]. This difference, however, is not of patentable merits since it is believed that the circuit of

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Fig. 1 disclosed by Uchida is capable of working properly without the surge suppressor [17, 18], or in other words, the surge suppressor [17, 18] and its function of absorbing the surges that develop across the transformer primary winding [8] can be omitted if not desired. Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention to eliminate the surge suppressor [17, 18] and its function distributed to the transformer in the circuit of the Uchida upon a desirability or expectation so as to be suitable for achieving a particular end in a given circumstance.

With respect to claim 2, Uchida discloses, in Fig. 1, a capacitor [11] is added in parallel to the secondary winding [9] for adjusting the resonance period of the resonant circuit [9, 11].

With respect to claim 3, Uchida obviously discloses all of the claimed subject matter, as expressly recited in claim 1, except that the transformer has a couple factor smaller than 1. However, this difference is not of patentable merit since it has been commonly known in the art that the worse the coupling factor, the higher the necessary quality factor  $Q$  (*see Prior Art of Record to Jansen, U.S. Patent No. 5,608,613; col. 4, lines 66-67 and col. 5, lines 1-2*). Accordingly, to perform a coupling factor of smaller than 1 for the windings [8, 9] of the transformer of Uchida to improve the high quality factor  $Q$  of the circuit of Uchida would have been deemed obvious to a person skilled in the art.

With respect to claim 4, Uchida discloses that the control element [5] is selected to cause the on-time of the switch to be at least half of a resonance frequency of the resonance circuit (see col. 5, lines 17-32).

With respect to claim 5, Uchida discloses that the control element [5] is selected to cause the off-time of the switch to be sufficient to reduce a current in the diode [16] to substantially



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zero (at time from  $t_1$  to  $t_2$ ; see Fig. 3) during demagnetization of the transformer (see col. 5, lines 33-52).

With respect to claim 6, Uchida discloses that the circuit is characterized in that a resistor [18] is connected in series to the diode [16] (see Fig. 1) to reduce the off- time.

With respect to claim 8, Uchida discloses all of the claimed subject matter, as expressly recited in claim 7, except that the load is a high-intensity discharge lamp and that a first series of pulses is applied to ignite the lamp, whereupon a second series of pulses is applied to operate the lamp during the electrode heating phase of said lamp. This difference, however, is not of patentable merit since the lamp has been well known as a load or lamp load and that the switching circuit of Uchida is operable to hold the output voltage constant (see col. 4, lines 14-16). For this advantage, to employ a HID lamp, in lieu of the load, in the circuit of Uchida, whereupon the first series of pulses is applied to ignite the lamp, and the second series of pulses is applied to operate the lamp during the electrode heating phase of said lamp, upon a desirability or environment of use, would have been deemed obvious to a person skill in the art.

With respect to claim 10, Uchida discloses that the off-time of the switch is chosen to be higher than a time necessary to reduce a current through the diode [16] to substantially zero (at time from  $t_1$  to  $t_2$ ; see Fig. 3; col. 5, lines 33-52).

With respect to claim 12, Uchida discloses, in Figs. 1-3, a circuit for providing power to a load [14] comprising (1) a transformer [2] having a primary winding [8] and a secondary winding [9]; the load [14] being connected to the secondary winding [9], (2) a switch [3] coupled to the primary winding [8], an on-time and an off-time of the switch [3] being controllable by a control element [5], for generating a voltage pulse (see Fig. 2; col. 4, lines 15-16) over the

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primary winding [8], and (3) a diode [16] (see Fig. 1) coupled in series with a surge suppressor [17, 18] and both coupled in parallel to the primary winding [8] for absorbing the surges developed across the primary winding [8] of the transformer (see col. 4, lines 52-59) and for forward biased by the voltage developed in the primary winding [8] of the transformer [2] when the switch [3] is turned off (see col. 4, lines 30-32) and thus resulting in demagnetizing the transformer during the off-time of the switch [3]. Uchida does not disclose that the diode [16] is directly coupled in parallel to the primary winding [8] of the transformer [2]. This means that there is no such arrangement of the surge suppressor [17, 18]. This difference, however, is not of patentable merits since it is believed that the circuit of Fig. 1 disclosed by Uchida is capable of working properly without the surge suppressor [17, 18], or in other words, the surge suppressor [17, 18] and its function of absorbing the surges that develop across the transformer primary winding [8] can be omitted if not desired. Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention to eliminate the surge suppressor [17, 18] and its function distributed to the transformer in the circuit of the Uchida upon a desirability or expectation so as to be suitable for achieving a particular end in a given circumstance.

With respect to claim 13, Uchida discloses, in Fig. 1, that the circuit further comprises a capacitor [11] which is connected in parallel to the secondary winding [9] for adjusting the resonance period of a resonant circuit [9, 11] associated with the secondary winding [9].

With respect to claim 14, Uchida obviously discloses all of the claimed subject matter, as expressly recited in claim 12, except that the transformer has a couple factor smaller than 1. However, this difference is not of patentable merit since it has been commonly known in the art that the worse the coupling factor, the higher the necessary quality factor  $Q$  (*see Prior Art of*

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*Record to Jansen, U.S. Patent No. 5,608,613; col. 4, lines 66-67 and col. 5, lines 1-2).*

Accordingly, to perform a coupling factor of smaller than 1 for the windings [8, 9] of the transformer of Uchida to improve the high quality factor Q of the circuit of Uchida would have been deemed obvious to a person skilled in the art.

With respect to claim 15, Uchida discloses that the control element [5] is selected to cause the on-time of the switch to be at least half of a resonance frequency of the resonance circuit (see col. 5, lines 17-32) associated with the secondary winding [9].

With respect to claim 16, Uchida discloses that the control element [5] is selected to cause the off-time of the switch to be sufficient to reduce a current in the diode [16] to substantially zero (at time from t1 to t2; see Fig. 3) during demagnetization of the transformer (see col. 5, lines 33-52).

With respect to claim 17, Uchida discloses that the circuit is characterized in that a resistor [18] is connected in series to the diode [16] (see Fig. 1) to reduce the off- time.

With respect to claim 18, Uchida discloses that the control element [5] is configured to control the switch to provide a voltage pulse to the primary winding [8] only if a free-running current through the diode [Id] is substantially zero (see Figs. 2 and 3).

***Allowable Subject Matter***

12. Claims 9 and 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

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- A circuit for providing a load with a predetermined specification comprising means for determining a maximum oscillation period of the resonant circuit based on a maximum value of a capacitance at a secondary side of the transformer when the load is connected, in combination with the remaining claimed limitations as called for in claim 9; and
- A circuit for providing a load with a predetermined specification comprising means for calculating a mean value of a short-circuit current over the on-time and the off-time of the switch for a range of couple factors, in combination with the remaining claimed limitations as called for in claim 9.

***Remarks and conclusion***

14. Applicants' arguments on the teaching of the cited prior art to Uchida with respect to the amended claims 1-8 at pages 13-15 in the amendment filed on 03/15/2007 have been fully considered but they are not persuasive.

With respect to independent claims 1 and 12, it is agreed that the cited reference to Uchida does not teach that the diode is directly coupled in parallel to the primary winding [8] of the transformer [2]. This difference, however, is not of patentable merits since it is believed that the circuit of Fig. 1 disclosed by Uchida is capable of working properly without the surge suppressor [17, 18], or in other words, the surge suppressor [17, 18] and its function of absorbing the surges that develop across the transformer primary winding [8] can be omitted if not desired.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to eliminate the surge suppressor [17, 18] and its function distributed to the

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transformer in the circuit of the Uchida upon a desirability or expectation so as to be suitable for achieving a particular end in a given circumstance.

Consequently:

- Claim 7 remains rejected as being anticipated by the teaching of Uchida since all the claimed limitations are included therein (see details above);
- Claims 1-6, 8, 10, and 12-18 are now rejected as being unpatentable over the teaching of Uchida (see details above); and
- Claims 9 and 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Owens Douglas can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

05/22/2007

A handwritten signature in black ink, appearing to read 'Thuy V. Tran', is written over a light blue grid background.

**THUY V. TRAN  
PRIMARY EXAMINER**